As a result, it was found that this mRNA had been expressed in most parts of the central nervous system, indicating its important role in nerve tissues.

Industrial Applicability

The protein, its partial peptide or a salt thereof of the present invention has physiological activities such as a nerve-extending or nerve-regenerating activity, a gliacyte stimulating activity, and so on. The protein, etc. or the DNA coding for the protein, etc. of the present invention is useful as a therapeutic or prophylactic agent for Alzheimer's disease, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis (ALS), dementia or cerebellar degeneration. The antibody against the protein, etc. can be used in the assay of the protein, etc. in a test sample. Furthermore, the protein, etc. is useful as a screening reagent for compounds or their salts capable of promoting the function of the protein.

SEQUENCE LISTING

INFORMATION FOR SEQ ID NO:1

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH:187

(B) TYPE: Amino acid

(C) TOPOLOGY: Linear

(ii) MOLECULE TYPE: Protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1

```
Ala Pro Arg Pro Cys Gln Ala Pro Gln Gln Trp Glu Gly Arg Gln Val
 1               5                  10                  15
Met Tyr Gln Gln Ser Ser Gly Arg Asn Ser Arg Ala Leu Leu Ser Tyr
            20                  25                  30
Asp Gly Leu Asn Gln Arg Val Arg Val Leu Asp Glu Arg Lys Ala Leu
        35                  40                  45
```

Ile Pro Cys Lys Arg Leu Phe Glu Tyr Ile Leu Leu Tyr Lys Asp Gly
50 55 60
Val Met Phe Gln Ile Asp Gln Ala Thr Lys Gln Cys Ser Lys Met Thr
65 70 75 80
Leu Thr Gln Pro Trp Asp Pro Leu Asp Ile Pro Gln Asn Ser Thr Phe
85 90 95
Glu Asp Gln Tyr Ser Ile Gly Gly Pro Gln Glu Gln Ile Thr Val Gln
100 105 110
Glu Trp Ser Asp Arg Lys Ser Ala Arg Ser Tyr Glu Thr Trp Ile Gly
115 120 125
Ile Tyr Thr Val Lys Asp Cys Tyr Pro Val Gln Glu Thr Phe Thr Ile
130 135 140
Asn Tyr Ser Val Ile Leu Ser Thr Arg Phe Phe Asp Ile Gln Leu Gly
145 150 155 160
Ile Lys Asp Pro Ser Val Phe Thr Pro Pro Ser Thr Cys Gln Met Ala
165 170 175
Gln Leu Glu Lys Met Ser Glu Asp Cys Ser Trp
180 185

INFORMATION FOR SEQ ID NO:2

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH:190

(B) TYPE: Amino acid

(C) TOPOLOGY: Linear

(ii) MOLECULE TYPE: Protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2

Ser Pro Gly Thr Pro Gln Pro Cys Gln Ala Pro Gln Gln Trp Glu Gly
1 5 10 15
Arg Gln Val Leu Tyr Gln Gln Ser Ser Gly His Asn Ser Arg Ala Leu
20 25 30
Val Ser Tyr Asp Gly Leu Asn Gln Arg Val Arg Val Leu Asp Glu Arg
35 40 45
Lys Ala Leu Ile Pro Cys Lys Arg Leu Phe Glu Tyr Ile Leu Leu Tyr
50 55 60
Lys Asp Gly Val Met Phe Gln Ile Glu Gln Ala Thr Lys Leu Cys Ala

65 70 75 80
Lys Ile Pro Leu Ala Glu Pro Trp Asp Pro Leu Asp Ile Pro Gln Asn
85 90 95
Ser Thr Phe Glu Asp Gln Tyr Ser Ile Gly Gly Pro Gln Glu Gln Ile
100 105 110
Met Val Gln Glu Trp Ser Asp Arg Arg Thr Ala Arg Ser Tyr Glu Thr
115 120 125
Trp Ile Gly Val Tyr Thr Ala Lys Asp Cys Tyr Pro Val Gln Glu Thr
130 135 140
Phe Ile Arg Asn Tyr Thr Val Val Leu Ser Thr Arg Phe Phe Asp Val
145 150 155 160
Gln Leu Gly Ile Lys Asp Pro Ser Val Phe Thr Pro Pro Ser Thr Cys
165 170 175
Gln Thr Ala Gln Pro Glu Lys Met Lys Glu Asn Cys Ser Leu
180 185 190

INFORMATION FOR SEQ ID NO:3

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH:187

(B) TYPE: Amino acid

(C) TOPOLOGY: Linear

(ii) MOLECULE TYPE: Protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3

Thr Pro Gln Pro Cys Gln Ala Pro Gln Gln Trp Glu Gly Arg Gln Val
1 5 10 15
Leu Tyr Gln Gln Ser Ser Gly His Asn Asn Arg Ala Leu Val Ser Tyr
20 25 30
Asp Gly Leu Asn Gln Arg Val Arg Val Leu Asp Glu Arg Lys Ala Leu
35 40 45
Ile Pro Cys Lys Arg Leu Phe Glu Tyr Ile Leu Leu Tyr Lys Glu Gly
50 55 60
Val Met Phe Gln Ile Glu Gln Ala Thr Lys Gln Cys Ala Lys Ile Pro
65 70 75 80
Leu Val Glu Ser Trp Asp Pro Leu Asp Ile Pro Gln Asn Ser Thr Phe
85 90 95

Glu Asp Gln Tyr Ser Ile Gly Gly Pro Gln Glu Gln Ile Leu Val Gln
100 105 110
Glu Trp Ser Asp Arg Arg Thr Ala Arg Ser Tyr Glu Thr Trp Ile Gly
115 120 125
Val Tyr Thr Ala Lys Asp Cys Tyr Pro Val Gln Glu Thr Phe Ile Arg
130 135 140
Asn Tyr Thr Val Val Met Ser Thr Arg Phe Phe Asp Val Gln Leu Gly
145 150 155 160
Ile Lys Asp Pro Ser Val Phe Thr Pro Pro Ser Thr Cys Gln Ala Ala
165 170 175
Gln Pro Glu Lys Met Ser Asp Gly Cys Ser Leu
180

INFORMATION FOR SEQ ID NO:4
(i) SEQUENCE CHARACTERISTICS
(A) LENGTH:13
(B) TYPE: Amino acid
(C) TOPOLOGY: Linear
(ii) MOLECULE TYPE: Peptide
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4

Pro Cys Gln Ala Pro Gln Gln Trp Glu Gly Arg Gln Val
1 5 10

INFORMATION FOR SEQ ID NO:5
(i) SEQUENCE CHARACTERISTICS
(A) LENGTH:32
(B) TYPE: Amino acid
(C) TOPOLOGY: Linear
(ii) MOLECULE TYPE: Peptide
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5

Gln Ile Asp Gln Ala Thr Lys Gln Cys Ser Lys Met Thr Leu Thr Gln
1 5 10 15
Pro Trp Asp Pro Leu Asp Ile Pro Gln Asn Ser Thr Phe Glu Asp Gln
20 25 30

INFORMATION FOR SEQ ID NO:6

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH:25

(B) TYPE: Amino acid

(C) TOPOLOGY: Linear

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6

Ser Tyr Glu Thr Trp Ile Gly Ile Tyr Thr Val Lys Asp Cys Tyr Pro
1 5 10 15
Val Gln Glu Thr Phe Thr Ile Asn Tyr
20

INFORMATION FOR SEQ ID NO:7

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH:17

(B) TYPE: Amino acid

(C) TOPOLOGY: Linear

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7

Gln Leu Gly Ile Lys Asp Pro Ser Val Phe Thr Pro Pro Ser Thr Cys
1 5 10 15
Gln

INFORMATION FOR SEQ ID NO:8

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH:39

(B) TYPE: Amino acid

(C) TOPOLOGY: Linear

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8

Ser Tyr Asp Gly Leu Asn Gln Arg Val Arg Val Leu Asp Glu Arg Lys
1 5 10 15
Ala Leu Ile Pro Cys Lys Arg Leu Phe Glu Tyr Ile Leu Leu Tyr Lys

20 25 30

Asp Gly Val Met Phe Gln Ile
35

INFORMATION FOR SEQ ID NO:9

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH:26

(B) TYPE: Amino acid

(C) TOPOLOGY: Linear

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9

Pro Trp Asp Pro Leu Asp Ile Pro Gln Asn Ser Thr Phe Glu Asp Gln
1 5 10 15

Tyr Ser Ile Gly Gly Pro Gln Glu Gln Ile
20 25

INFORMATION FOR SEQ ID NO:10

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH:200

(B) TYPE: Amino acid

(C) TOPOLOGY: Linear

(ii) MOLECULE TYPE: Protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10

Trp Thr Leu Cys Gly Leu Cys Ser Leu Gly Ala Val Gly Ala Pro Arg
1 5 10 15

Pro Cys Gln Ala Pro Gln Gln Trp Glu Gly Arg Gln Val Met Tyr Gln
20 25 30

Gln Ser Ser Gly Arg Asn Ser Arg Ala Leu Leu Ser Tyr Asp Gly Leu
35 40 45

Asn Gln Arg Val Arg Val Leu Asp Glu Arg Lys Ala Leu Ile Pro Cys
50 55 60

Lys Arg Leu Phe Glu Tyr Ile Leu Leu Tyr Lys Asp Gly Val Met Phe
65 70 75 80

Gln Ile Asp Gln Ala Thr Lys Gln Cys Ser Lys Met Thr Leu Thr Gln

85 90 95

Pro Trp Asp Pro Leu Asp Ile Pro Gln Asn Ser Thr Phe Glu Asp Gln
100 105 110

Tyr Ser Ile Gly Gly Pro Gln Glu Gln Ile Thr Val Gln Glu Trp Ser
115 120 125

Asp Arg Lys Ser Ala Arg Ser Tyr Glu Thr Trp Ile Gly Ile Tyr Thr
130 135 140

Val Lys Asp Cys Tyr Pro Val Gln Glu Thr Phe Thr Ile Asn Tyr Ser
145 150 155 160

Val Ile Leu Ser Thr Arg Phe Phe Asp Ile Gln Leu Gly Ile Lys Asp
165 170 175

Pro Ser Val Phe Thr Pro Pro Ser Thr Cys Gln Met Ala Gln Leu Glu
180 185 190

Lys Met Ser Glu Asp Cys Ser Trp
195 200

INFORMATION FOR SEQ ID NO:11

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH:224

(B) TYPE: Amino acid

(C) TOPOLOGY: Linear

(ii) MOLECULE TYPE: Protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11

Met Pro Gly Arg Ala Pro Leu Arg Thr Val Pro Gly Ala Leu Gly Ala
1 5 10 15

Trp Leu Leu Gly Gly Leu Trp Ala Trp Thr Leu Cys Gly Leu Cys Ser
20 25 30

Leu Gly Ala Val Gly Ala Pro Arg Pro Cys Gln Ala Pro Gln Gln Trp
35 40 45

Glu Gly Arg Gln Val Met Tyr Gln Gln Ser Ser Gly Arg Asn Ser Arg
50 55 60

Ala Leu Leu Ser Tyr Asp Gly Leu Asn Gln Arg Val Arg Val Leu Asp
65 70 75 80

Glu Arg Lys Ala Leu Ile Pro Cys Lys Arg Leu Phe Glu Tyr Ile Leu
85 90 95

Leu Tyr Lys Asp Gly Val Met Phe Gln Ile Asp Gln Ala Thr Lys Gln
100 105 110
Cys Ser Lys Met Thr Leu Thr Gln Pro Trp Asp Pro Leu Asp Ile Pro
115 120 125
Gln Asn Ser Thr Phe Glu Asp Gln Tyr Ser Ile Gly Gly Pro Gln Glu
130 135 140
Gln Ile Thr Val Gln Glu Trp Ser Asp Arg Lys Ser Ala Arg Ser Tyr
145 150 155 160
Glu Thr Trp Ile Gly Ile Tyr Thr Val Lys Asp Cys Tyr Pro Val Gln
165 170 175
Glu Thr Phe Thr Ile Asn Tyr Ser Val Ile Leu Ser Thr Arg Phe Phe
180 185 190
Asp Ile Gln Leu Gly Ile Lys Asp Pro Ser Val Phe Thr Pro Pro Ser
195 200 205
Thr Cys Gln Met Ala Gln Leu Glu Lys Met Ser Glu Asp Cys Ser Trp
210 215 220

INFORMATION FOR SEQ ID NO:12

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH:224

(B) TYPE: Amino acid

(C) TOPOLOGY: Linear

(ii) MOLECULE TYPE: Protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12

Met Leu Thr Arg Ala Pro Arg Arg Leu Val Gln Gly Pro Arg Glu Thr
1 5 10 15
Trp Leu Leu Gly Gly Leu Trp Val Trp Ile Leu Cys Gly Leu Gly Met
20 25 30
Ala Gly Ser Pro Gly Thr Pro Gln Pro Cys Gln Ala Pro Gln Gln Trp
35 40 45
Glu Gly Arg Gln Val Leu Tyr Gln Gln Ser Ser Gly His Asn Ser Arg
50 55 60
Ala Leu Val Ser Tyr Asp Gly Leu Asn Gln Arg Val Arg Val Leu Asp
65 70 75 80
Glu Arg Lys Ala Leu Ile Pro Cys Lys Arg Leu Phe Glu Tyr Ile Leu

85 90 95

Leu Tyr Lys Asp Gly Val Met Phe Gln Ile Glu Gln Ala Thr Lys Leu
100 105 110

Cys Ala Lys Ile Pro Leu Ala Glu Pro Trp Asp Pro Leu Asp Ile Pro
115 120 125

Gln Asn Ser Thr Phe Glu Asp Gln Tyr Ser Ile Gly Gly Pro Gln Glu
130 135 140

Gln Ile Met Val Gln Glu Trp Ser Asp Arg Arg Thr Ala Arg Ser Tyr
145 150 155 160

Glu Thr Trp Ile Gly Val Tyr Thr Ala Lys Asp Cys Tyr Pro Val Gln
165 170 175

Glu Thr Phe Ile Arg Asn Tyr Thr Val Val Leu Ser Thr Arg Phe Phe
180 185 190

Asp Val Gln Leu Gly Ile Lys Asp Pro Ser Val Phe Thr Pro Pro Ser
195 200 205

Thr Cys Gln Thr Ala Gln Pro Glu Lys Met Lys Glu Asn Cys Ser Leu
210 215 220

INFORMATION FOR SEQ ID NO:13

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH:224

(B) TYPE: Amino acid

(C) TOPOLOGY: Linear

(ii) MOLECULE TYPE: Protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13

Met Pro Ala Arg Ala Pro Arg Arg Leu Val Gln Gly Pro Arg Gly Thr
1 5 10 15

Trp Leu Leu Gly Ser Leu Trp Val Trp Val Leu Cys Gly Leu Gly Met
20 25 30

Ala Gly Ser Leu Gly Thr Pro Gln Pro Cys Gln Ala Pro Gln Gln Trp
35 40 45

Glu Gly Arg Gln Val Leu Tyr Gln Gln Ser Ser Gly His Asn Asn Arg
50 55 60

Ala Leu Val Ser Tyr Asp Gly Leu Asn Gln Arg Val Arg Val Leu Asp
65 70 75 80

Glu Arg Lys Ala Leu Ile Pro Cys Lys Arg Leu Phe Glu Tyr Ile Leu
85 90 95
Leu Tyr Lys Glu Gly Val Met Phe Gln Ile Glu Gln Ala Thr Lys Gln
100 105 110
Cys Ala Lys Ile Pro Leu Val Glu Ser Trp Asp Pro Leu Asp Ile Pro
115 120 125
Gln Asn Ser Thr Phe Glu Asp Gln Tyr Ser Ile Gly Gly Pro Gln Glu
130 135 140
Gln Ile Leu Val Gln Glu Trp Ser Asp Arg Arg Thr Ala Arg Ser Tyr
145 150 155 160
Glu Thr Trp Ile Gly Val Tyr Thr Ala Lys Asp Cys Tyr Pro Val Gln
165 170 175
Glu Thr Phe Ile Arg Asn Tyr Thr Val Val Met Ser Thr Arg Phe Phe
180 185 190
Asp Val Gln Leu Gly Ile Lys Asp Pro Ser Val Phe Thr Pro Pro Ser
195 200 205
Thr Cys Gln Ala Ala Gln Pro Glu Lys Met Ser Asp Gly Cys Ser Leu
210 215 220

INFORMATION FOR SEQ ID NO:14

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH:37

(B) TYPE: Amino acid

(C) TOPOLOGY: Linear

(ii) MOLECULE TYPE: Peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14

Met Pro Gly Arg Ala Pro Leu Arg Thr Val Pro Gly Ala Leu Gly Ala
1 5 10 15
Trp Leu Leu Gly Gly Leu Trp Ala Trp Thr Leu Cys Gly Leu Cys Ser
20 25 30
Leu Gly Ala Val Gly
35

INFORMATION FOR SEQ ID NO:15

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH:24
(B) TYPE: Amino acid
(C) TOPOLOGY: Linear
(ii) MOLECULE TYPE: Peptide
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15

Met Pro Gly Arg Ala Pro Leu Arg Thr Val Pro Gly Ala Leu Gly Ala
1 5 10 15
Trp Leu Leu Gly Gly Leu Trp Ala
20

INFORMATION FOR SEQ ID NO:16
(i) SEQUENCE CHARACTERISTICS
(A) LENGTH:34
(B) TYPE: Amino acid
(C) TOPOLOGY: Linear
(ii) MOLECULE TYPE: Peptide
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16

Met Leu Thr Arg Ala Pro Arg Arg Leu Val Gln Gly Pro Arg Glu Thr
1 5 10 15
Trp Leu Leu Gly Gly Leu Trp Val Trp Ile Leu Cys Gly Leu Gly Met
20 25 30
Ala Gly

INFORMATION FOR SEQ ID NO:17
(i) SEQUENCE CHARACTERISTICS
(A) LENGTH:37
(B) TYPE: Amino acid
(C) TOPOLOGY: Linear
(ii) MOLECULE TYPE: Peptide
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17

Met Pro Ala Arg Ala Pro Arg Arg Leu Val Gln Gly Pro Arg Gly Thr
1 5 10 15
Trp Leu Leu Gly Ser Leu Trp Val Trp Val Leu Cys Gly Leu Gly Met

20 25 30

Ala Gly Ser Leu Gly

35

INFORMATION FOR SEQ ID NO:18

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH:561

(B) TYPE: Nucleic acid

(C) STRANDENESS: Double

(D) TOPOLOGY: Linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18

GCCCCGCGCC CGTGCCAGGC GCCGCAGCAG TGGGAGGGGC GCCAGGTTAT GTACCAGCAA 60

AGTAGCGGGC GCAACAGCCG CGCCCTGCTC TCCTACGACG GGCTCAACCA GCGCGTGCGG 120

GTGCTGGACG AGAGGAAGGC GCTGATCCCC TGCAAGAGAT TATTTGAATA TATTTTGCTG 180

TATAAGGATG GAGTGATGTT TCAGATTGAC CAAGCCACCA AGCAGTGCTC AAAGATGACC 240

CTGACACAGC CCTGGGATCC TCTTGACATT CCTCAAAACT CCACCTTTGA AGACCAGTAC 300

TCCATCGGGG GGCCTCAGGA GCAGATCACC GTCCAGGAGT GGTCGGACAG AAAGTCAGCT 360

AGATCCTATG AAACCTGGAT TGGCATCTAT ACAGTCAAGG ATTGCTATCC TGTCCAGGAA 420

ACCTTTACCA TAAACTACAG TGTGATATTG TCTACGCGGT TTTTTGACAT CCAGCTGGGT 480

ATTAAAGACC CCTCGGTGTT TACCCCTCCA AGCACGTGCC AGATGGCCCA ACTGGAGAAG 540

ATGAGCGAAG ACTGCTCCTG G 561

INFORMATION FOR SEQ ID NO:19

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH:570

(B) TYPE: Nucleic acid

(C) STRANDENESS: Double

(D) TOPOLOGY: Linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19

TCCCCGGGAA CCCCGCAGCC ATGCCAGGCG CCCCAGCAGT GGGAGGGACG TCAGGTTCTG 60

TACCAGCAGA GCAGCGGGCA CAACAGCCGC GCCCTGGTGT CCTACGATGG TCTCAACCAG 120

CGCGTGCGGG TGCTGGACGA AAGGAAGGCG CTGATCCCCT GCAAGAGATT ATTTGAATAC 180

ATTTTACTCT ATAAGGATGG AGTGATGTTT CAGATTGAAC AAGCCACCAA ACTGTGTGCA 240
AAGATACCCT TGGCAGAACC CTGGGATCCT CTCGACATTC CCCAGAATTC TACCTTTGAA 300
GATCAGTACT CTATCGGAGG GCCTCAGGAG CAGATCATGG TCCAGGAATG GTCTGACAGG 360
AGGACAGCCA GATCCTATGA AACCTGGATT GGCGTTTATA CAGCCAAGGA TTGCTACCCG 420
GTCCAGGAGA CCTTCATTAG GAACTACACT GTGGTCCTGT CCACTCGGTT CTTTGATGTG 480
CAGTTGGGCA TTAAAGACCC CTCTGTGTTC ACCCCACCAA GCACGTGCCA GACAGCACAG 540
CCAGAGAAGA TGAAAGAGAA CTGCTCCCTG 570

INFORMATION FOR SEQ ID NO:20

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH:561

(B) TYPE: Nucleic acid

(C) STRANDENESS: Double

(D) TOPOLOGY: Linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20

ACCCCACAGC CATGCCAGGC ACCCCAGCAG TGGGAGGGAC GCCAGGTTCT GTACCAGCAG 60
AGCAGCGGGC ACAACAACCG CGCCCTGGTG TCCTACGATG GTCTCAACCA GCGCGTGCGG 120
GTGCTGGACG AGAGGAAAGC GCTGATCCCC TGCAAGAGAT TATTTGAATA CATTTTACTC 180
TATAAGGAGG GAGTGATGTT TCAGATTGAA CAAGCCACCA AACAGTGTGC AAAGATCCCC 240
TTGGTGGAAT CCTGGGATCC TCTGGACATT CCCCAGAATT CTACCTTTGA AGATCAGTAC 300
TCCATCGGAG GGCCTCAGGA GCAGATCCTG GTCCAGGAGT GGTCTGACAG AAGAACAGCA 360
AGATCCTATG AAACTTGGAT CGGCGTTTAT ACAGCCAAGG ATTGTTATCC GGTCCAGGAG 420
ACCTTCATCA GGAACTACAC TGTGGTCATG TCCACGCGGT TCTTTGATGT GCAGCTAGGC 480
ATTAAGGACC CCTCTGTGTT CACCCCACCA AGCACATGCC AGGCAGCGCA GCCAGAGAAG 540
ATGAGTGACG GCTGCTCCTT G 561

INFORMATION FOR SEQ ID NO:21

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH:39

(B) TYPE: Nucleic acid

(C) STRANDENESS: Double

(D) TOPOLOGY: Linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21

CCGTGCCAGG CGCCGCAGCA GTGGGAGGGG CGCCAGGTT 39

INFORMATION FOR SEQ ID NO:22

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH:96

(B) TYPE: Nucleic acid

(C) STRANDENESS: Double

(D) TOPOLOGY: Linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22

CAGATTGACC AAGCCACCAA GCAGTGCTCA AAGATGACCC TGACACAGCC CTGGGATCCT 60

CTTGACATTC CTCAAAACTC CACCTTTGAA GACCAG 96

INFORMATION FOR SEQ ID NO:23

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH:75

(B) TYPE: Nucleic acid

(C) STRANDENESS: Double

(D) TOPOLOGY: Linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23

TCCTATGAAA CCTGGATTGG CATCTATACA GTCAAGGATT GCTATCCTGT CCAGGAAACC 60

TTTACCATAA ACTAC 75

INFORMATION FOR SEQ ID NO:24

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH:51

(B) TYPE: Nucleic acid

(C) STRANDENESS: Double

(D) TOPOLOGY: Linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24

CAGCTGGGTA TTAAAGACCC CTCGGTGTTT ACCCCTCCAA GCACGTGCCA G 51

INFORMATION FOR SEQ ID NO:25

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH:117

(B) TYPE: Nucleic acid

(C) STRANDENESS: Double

(D) TOPOLOGY: Linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25

TCCTACGACG GGCTCAACCA GCGCGTGCGG GTGCTGGACG AGAGGAAGGC GCTGATCCCC 60

TGCAAGAGAT TATTTGAATA TATTTTGCTG TATAAGGATG GAGTGATGTT TCAGATT 117

INFORMATION FOR SEQ ID NO:26

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH:78

(B) TYPE: Nucleic acid

(C) STRANDENESS: Double

(D) TOPOLOGY: Linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26

CCCTGGGATC CTCTTGACAT TCCTCAAAAC TCCACCTTTG AAGACCAGTA CTCCATCGGG 60

GGGCCTCAGG AGCAGATC 78

INFORMATION FOR SEQ ID NO:27

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH:600

(B) TYPE: Nucleic acid

(C) STRANDENESS: Double

(D) TOPOLOGY: Linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27

TGGACCCTGT GCGGCCTGTG CAGCCTGGGG GCGGTGGGAG CCCCGCGCCC GTGCCAGGCG 60

CCGCAGCAGT GGGAGGGGCG CCAGGTTATG TACCAGCAAA GTAGCGGGCG CAACAGCCGC 120

GCCCTGCTCT CCTACGACGG GCTCAACCAG CGCGTGCGGG TGCTGGACGA GAGGAAGGCG 180
CTGATCCCCT GCAAGAGATT ATTTGAATAT ATTTTGCTGT ATAAGGATGG AGTGATGTTT 240
CAGATTGACC AAGCCACCAA GCAGTGCTCA AAGATGACCC TGACACAGCC CTGGGATCCT 300
CTTGACATTC CTCAAAACTC CACCTTTGAA GACCAGTACT CCATCGGGGG GCCTCAGGAG 360
CAGATCACCG TCCAGGAGTG GTCGGACAGA AAGTCAGCTA GATCCTATGA AACCTGGATT 420
GGCATCTATA CAGTCAAGGA TTGCTATCCT GTCCAGGAAA CCTTTACCAT AAACTACAGT 480
GTGATATTGT CTACGCGGTT TTTTGACATC CAGCTGGGTA TTAAAGACCC CTCGGTGTTT 540
ACCCCTCCAA GCACGTGCCA GATGGCCCAA CTGGAGAAGA TGAGCGAAGA CTGCTCCTGG 600

INFORMATION FOR SEQ ID NO:28

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH:672

(B) TYPE: Nucleic acid

(C) STRANDENESS: Double

(D) TOPOLOGY: Linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28

ATGCCAGGAC GCGCTCCCCT CCGCACCGTC CCGGGCGCCC TGGGTGCCTG GCTGCTGGGC 60
GGCCTCTGGG CCTGGACCCT GTGCGGCCTG TGCAGCCTGG GGGCGGTGGG AGCCCCGCGC 120
CCGTGCCAGG CGCCGCAGCA GTGGGAGGGG CGCCAGGTTA TGTACCAGCA AAGTAGCGGG 180
CGCAACAGCC GCGCCCTGCT CTCCTACGAC GGGCTCAACC AGCGCGTGCG GGTGCTGGAC 240
GAGAGGAAGG CGCTGATCCC CTGCAAGAGA TTATTTGAAT ATATTTTGCT GTATAAGGAT 300
GGAGTGATGT TTCAGATTGA CCAAGCCACC AAGCAGTGCT CAAAGATGAC CCTGACACAG 360
CCCTGGGATC CTCTTGACAT TCCTCAAAAC TCCACCTTTG AAGACCAGTA CTCCATCGGG 420
GGGCCTCAGG AGCAGATCAC CGTCCAGGAG TGGTCGGACA GAAAGTCAGC TAGATCCTAT 480
GAAACCTGGA TTGGCATCTA TACAGTCAAG GATTGCTATC CTGTCCAGGA AACCTTTACC 540
ATAAACTACA GTGTGATATT GTCTACGCGG TTTTTTGACA TCCAGCTGGG TATTAAAGAC 600
CCCTCGGTGT TTACCCCTCC AAGCACGTGC CAGATGGCCC AACTGGAGAA GATGAGCGAA 660
GACTGCTCCT GG 672

INFORMATION FOR SEQ ID NO:29

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH:672

(B) TYPE: Nucleic acid

(C) STRANDENESS: Double

(D) TOPOLOGY: Linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29

ATGCTCACAC GCGCTCCCCG CCGCCTGGTC CAGGGGCCCC GGGAGACCTG GCTGCTTGGC 60
GGCCTCTGGG TCTGGATATT GTGCGGCCTG GGGATGGCGG GCTCCCCGGG AACCCCGCAG 120
CCATGCCAGG CGCCCCAGCA GTGGGAGGGA CGTCAGGTTC TGTACCAGCA GAGCAGCGGG 180
CACAACAGCC GCGCCCTGGT GTCCTACGAT GGTCTCAACC AGCGCGTGCG GGTGCTGGAC 240
GAAAGGAAGG CGCTGATCCC CTGCAAGAGA TTATTTGAAT ACATTTTACT CTATAAGGAT 300
GGAGTGATGT TTCAGATTGA ACAAGCCACC AAACTGTGTG CAAAGATACC CTTGGCAGAA 360
CCCTGGGATC CTCTCGACAT TCCCCAGAAT TCTACCTTTG AAGATCAGTA CTCTATCGGA 420
GGGCCTCAGG AGCAGATCAT GGTCCAGGAA TGGTCTGACA GGAGGACAGC CAGATCCTAT 480
GAAACCTGGA TTGGCGTTTA TACAGCCAAG GATTGCTACC CGGTCCAGGA GACCTTCATT 540
AGGAACTACA CTGTGGTCCT GTCCACTCGG TTCTTTGATG TGCAGTTGGG CATTAAAGAC 600
CCCTCTGTGT TCACCCCACC AAGCACGTGC CAGACAGCAC AGCCAGAGAA GATGAAAGAG 660
AACTGCTCCC TG 672

INFORMATION FOR SEQ ID NO:30

(i) SEQUENCE CHARACTERISTICS

(A) LENGTH:672

(B) TYPE: Nucleic acid

(C) STRANDENESS: Double

(D) TOPOLOGY: Linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30

ATGCCCGCGC GCGCTCCCCG CCGCCTGGTC CAGGGGCCTC GGGGGACCTG GCTGCTGGGA 60
AGCCTCTGGG TCTGGGTGCT GTGCGGCCTG GGGATGGCGG GCTCCCTGGG AACCCCACAG 120
CCATGCCAGG CACCCCAGCA GTGGGAGGGA CGCCAGGTTC TGTACCAGCA GAGCAGCGGG 180
CACAACAACC GCGCCCTGGT GTCCTACGAT GGTCTCAACC AGCGCGTGCG GGTGCTGGAC 240
GAGAGGAAAG CGCTGATCCC CTGCAAGAGA TTATTTGAAT ACATTTTACT CTATAAGGAG 300
GGAGTGATGT TTCAGATTGA ACAAGCCACC AAACAGTGTG CAAAGATCCC CTTGGTGGAA 360
TCCTGGGATC CTCTGGACAT TCCCCAGAAT TCTACCTTTG AAGATCAGTA CTCCATCGGA 420
GGGCCTCAGG AGCAGATCCT GGTCCAGGAG TGGTCTGACA GAAGAACAGC AAGATCCTAT 480
GAAACTTGGA TCGGCGTTTA TACAGCCAAG GATTGTTATC CGGTCCAGGA GACCTTCATC 540
AGGAACTACA CTGTGGTCAT GTCCACGCGG TTCTTTGATG TGCAGCTAGG CATTAAGGAC 600

CCCTCTGTGT TCACCCCACC AAGCACATGC CAGGCAGCGC AGCCAGAGAA GATGAGTGAC 660
GGCTGCTCCT TG 672

INFORMATION FOR SEQ ID NO:31
(i) SEQUENCE CHARACTERISTICS
(A) LENGTH:111
(B) TYPE: Nucleic acid
(C) STRANDENESS: Double
(D) TOPOLOGY: Linear
(ii) MOLECULE TYPE: cDNA
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:31

ATGCCAGGAC GCGCTCCCCT CCGCACCGTC CCGGGCGCCC TGGGTGCCTG GCTGCTGGGC 60
GGCCTCTGGG CCTGGACCCT GTGCGGCCTG TGCAGCCTGG GGGCGGTGGG A 111

INFORMATION FOR SEQ ID NO:32
(i) SEQUENCE CHARACTERISTICS
(A) LENGTH:72
(B) TYPE: Nucleic acid
(C) STRANDENESS: Double
(D) TOPOLOGY: Linear
(ii) MOLECULE TYPE: cDNA
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:31

ATGCCAGGAC GCGCTCCCCT CCGCACCGTC CCGGGCGCCC TGGGTGCCTG GCTGCTGGGC 60
GGCCTCTGGG CC 72

INFORMATION FOR SEQ ID NO:33
(i) SEQUENCE CHARACTERISTICS
(A) LENGTH:102
(B) TYPE: Nucleic acid
(C) STRANDENESS: Double
(D) TOPOLOGY: Linear
(ii) MOLECULE TYPE: cDNA
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33

ATGCTCACAC GCGCTCCCCG CCGCCTGGTC CAGGGGCCCC GGGAGACCTG GCTGCTTGGC 60
GGCCTCTGGG TCTGGATATT GTGCGGCCTG GGGATGGCGG GC 102

INFORMATION FOR SEQ ID NO:34

(i) SEQUENCE CHARACTERISTICS
(A) LENGTH:111
(B) TYPE: Nucleic acid
(C) STRANDENESS: Double
(D) TOPOLOGY: Linear
(ii) MOLECULE TYPE: cDNA
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:34

ATGCCCGCGC GCGCTCCCCG CCGCCTGGTC CAGGGGCCTC GGGGGACCTG GCTGCTGGGA 60
AGCCTCTGGG TCTGGGTGCT GTGCGGCCTG GGGATGGCGG GCTCCCTGGG A 111

INFORMATION FOR SEQ ID NO:35

(i) SEQUENCE CHARACTERISTICS
(A) LENGTH:21
(B) TYPE: Nucleic acid
(C) STRANDENESS: Single
(D) TOPOLOGY: Linear
(ii) MOLECULE TYPE: Synthetic DNA
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35

AGGTGGAGTT TTGAGGAATG T 21